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The Culture of GARDEN ROSES

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GARDEN ROSES are of many different types. The *shrub* roses include the *rogosas,* the *sweetbriars,* and many *"species"* roses. These are hardy plants that require little special culture. *Tree* roses (plants budded on an understock standard about 3 feet in height) require special winter protection in New York State and in general are not satisfactory except in areas where winters are mild. *Miniature* or *Tom Thumb* roses are often planted in rock gardens, and require the same care given garden roses. Far more important than any of these are the *hybrid teas, hybrid perpetuals, floribundas,* and the *climbers.* The hybrid teas and the floribundas are the most important garden roses and it is with these that this bulletin is primarily concerned.

Rose plants procured from the nursery may be either on their own roots or budded on some understock. The climbers and shrub types are almost always on their own roots and in fact many varieties may be started easily from cuttings by the amateur. The hybrid teas, hybrid perpetuals, and floribundas are sometimes sold on their own roots and such plants are satisfactory in the mild climates of the Southern States. As a rule, however, they are not satisfactory in New York State where the usual practice is for the nurseryman to sell budded plants grown in the field.

Site

SELECT a site for the rose garden where the plants will receive direct sunlight for about six hours each day. Light shade in the afternoon is an advantage. Be sure, however, not to place the rose garden close to trees with matted surface roots, such as maples, elms, and poplars. This disadvantage can be partly corrected by cutting the tree roots along the edge of the rose bed several times a year. Although roses should not be planted in a dead air pocket with no air circulation, they need some protection from high winds. Hedges, shrub borders, walls, or fences may provide this.

Soil Requirements

ANY good garden soil mixed with peat or other organic matter and well fertilized can produce good roses, provided it is well drained. There is some preference for silty clay or clay loam; the lighter sands should be avoided. The optimum pH value of the soil for roses is between 5.5 and 6.5, which is slightly on the acid side. Very acid or very alkaline soils are unsuitable.

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Drainage is of the greatest importance and must be provided on heavy soils that are not well drained. A gentle slope helps to carry off surface water. For subsoil drainage you may use tile or fill trenches with rocks. Be sure such trenches have an outlet away from the rose garden. Relatively deep surface soil is a decided advantage, particularly if it is underlain with heavy clay subsoil.

Prepare the rose bed well by spading to a depth of 12 inches, and working in well-rotted manure if it is available. From 8 to 10 bushels for each 100 square feet of surface area is not too much. Peat, leaf mold, or compost are also satisfactory forms of organic matter. The soil should be well pulverized, and it is a good plan, but not essential, to remove rocks.

Planting

ROSES may be planted either in the fall or in the spring. In severe climates, spring planting is preferable. Plants received from reputable nurseries are packed so that they will stand a week or more from time of shipment without serious damage if kept cool (40° to 50° F). If, however, you cannot set the plants soon after arrival, unpack them and heel them in to prevent drying from winds or sunlight. If the plants seem somewhat dry when unpacked, place the roots in water for a few hours or bury the plants in damp soil, tops and all, for several days.

Plant budded rose plants with the bud union 2 inches below the soil surface. Dig the hole large enough to spread the roots in a natural manner, radiating from the stem like the fingers of a hand. Cover the roots with topsoil and tamp it firmly. Never plant when the soil is so wet that it can be pressed into balls that will not crumble. After the soil is packed firmly about the roots, water the plants thoroughly.

Hybrid teas and vigorous floribundas should be spaced about 2 feet apart, hybrid perpetuals about 3 feet, and climbers at least 5 feet apart.

At the time of planting, shorten back the canes of the hybrid teas and hybrid perpetuals. The diagrams (figure 1) illustrate pruning for spring and fall planting.

Fertilizing

IT is important to keep up the fertility of the rose bed. Well-rotted manure is excellent. Apply it at the rate of 5 bushels to 100 square feet in the spring, and make another application in mid-summer. Apply commercial fertilizer of 5-10-5 or similar formula in the spring when 4 to 6 inches of new growth has been made, and if necessary make a second application about 8 weeks later. Spread the fertilizer over the surface of the bed at the rate of 3 or 4 pounds to 100 square feet, work it into the soil, and water it in. If the weather following fertilization is dry, additional watering is needed.

Mulching

MULCHING the rose bed with granulated peat moss or some other loose material, such as buckwheat hulls, ground corncobs, shredded tobacco stems, sawdust, and the like, is

Figure 1. How to prune in fall or spring planting.

a satisfactory practice to retain moisture and keep down weeds. Mulching with organic materials may cause a temporary nitrogen deficiency evidenced by yellowing of the rose leaves. Application of a nitrogenous fertilizer will counteract the condition. The mulch should be about 2 inches thick.

Diseases and Insects

DISEASES and insects may be troublesome in the rose garden. The regular use of the so-called "All-Purpose" sprays and dusts containing combinations of fungicides and insecticides is a good preventive measure.

In general, sprays are preferred to dusts. Sulfur is recommended to counteract *mildew*. The standard practice for the control of *blackspot* is to use a combination of sulfur and ferbam, maneb, zineb, or captan every week. This prevents infection and protects new foliage before the leaves become infected. Keeping a healthy leaf surface is essential to strong vigorous plants.

The *Japanese beetle, rose chafers, leafhoppers, thrips,* and *rose midge* may be serious pests of roses. They may be controlled by a combination of DDT and malathion. Control of *Japanese beetles* in badly infested areas is discussed in Cornell Extension Bulletin 770, *The Japanese Beetle. Aphids* are controlled by a nicotine sulfate spray.

If unrecognized disease or insects become a problem, consult the Department of Plant Pathology or the Department of Entomology at Cornell University.

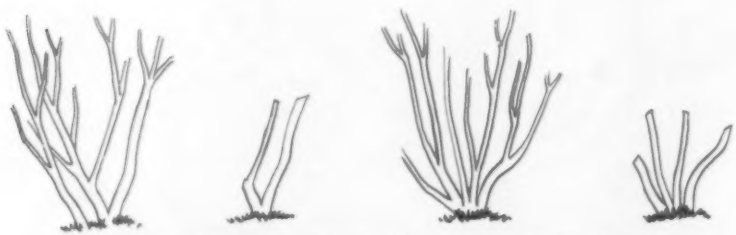

Figure 2. Hybrid tea roses before and after pruning. The more vigorous the bush, the more wood is left

Winter Protection

In New York State winter protection is necessary for hybrid teas and in many seasons is an advantage with hybrid perpetuals and floribundas. No method has been devised better than mounding soil around the base of each plant to a height of 10 or 12 inches. Do this in late fall after the first hard frost. If plants are spaced far enough apart, you may bring the soil from between the plants and heap it about the plants, then remove it in the spring. Level the mounded soil back in place in late March or early April when danger of serious freezing weather has passed.

In regions where climbers suffer winterkilling, lay the canes on the ground and mound soil over the base of the plants. It may be necessary to hold down the canes at the base with stakes. Cover the canes lying on the ground with earth or some mulching material. If the plants are next to lawn areas, laying the canes in the grass is a good practice.

Either dig and bury rose trees in a trench over winter or leave them in place and wrap them with sheaves of straw kept in place with burlap. Be sure to protect the bud union.

Pruning

Prune the *climbing* and *pillar roses* in midsummer just after the blooms have faded. At this time cut off close to the roots the old canes that have produced flowers. New canes for next year's bloom will be several feet long at this time. Do not break or bruise these new canes in the pruning process. Some semi-climbing varieties, such as Dr. Van Fleet and the climbing hybrid teas and climbing floribundas, should have only the older flowering wood removed, leaving the more vigorous shoots which originated in previous years as well as the new canes coming from the base.

Hybrid teas, hybrid perpetuals, and *floribundas* are pruned in the spring after all danger from winter injury is past. Remove all dead winterkilled canes. It is also advisable to cut out weak and spindly growth which is smaller than a lead pencil in diameter, provided there are two or three more vigorous canes left. Prune back the remaining canes to a point below which no winter injury is evident. (Figure 2.)

During the summer little pruning is needed. In cutting flowers, leave at least two nodes at the base of each flowering shoot.

Just before the plants are mounded with earth for winter protection, shorten the vigorous canes so that they will not whip about in the wind. After a few years, experience will tell you the average amount of winter killing to expect, and you can cut the canes back to that point in the fall.

The *hybrid perpetuals* are somewhat more vigorous than the hybrid teas. They are pruned in much the same way, but wherever possible more green wood is left to produce flowers. If canes have come through the winter undamaged, they may be left 2 or 3 feet high.

Floribunda roses require little pruning except to remove old wood and to shorten back some of the canes for the first season.

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